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ical Survey and the State Museum in 1904 Dr. John Mason Clarke inherited positions rich in traditions and undertook no light task. Long years of experience as an assistant to James Hall had given him a wide and thorough knowledge of the state's geology and paleontology, and, quite as important, of its legislators. Although a paleontologist and stratigrapher himself, all the other lines centering in his office have received his support. While the great monographs on the faunas of the Devonian, the graptolites, the ancient sponges and the eurypterids have seen the light, the areal geology has had its full recognition, the ancient crystallines have received no less attention than the fossiliferous beds and the mineral resources. Botany, zoology and archeology have had their due and are well represented in the publications of the state museum. The geologic map of the state has progressed on the topographic scale of one mile to the inch, so far that almost one half of the area of the state has been plotted in minute detail. The museum has kept in touch with and published the geological results obtained in connection with the development of the aqueduct. It has availed itself of the cooperation of many of the most able specialists in the state.

It is now the great opportunity of our state not only to maintain liberally a museum the purpose of which is to present in fulness the character of its natural resources, but to furnish the State Department of Education with the means of spreading the work of the museum in popularized form throughout the schools of the state. The appropriations have doubled in recent years, now amounting approximately to \$40,000, but they are insufficient to develop a museum worthy of the dignity of the state of New York either along the

lines of exhibition or those of public education.

The truest measure of civilization and of intelligence in the government of a state is the support of its institutions of science, for the science of our time in its truest sense is not the opinions or prejudices, the strength or weakness of its votaries, it is the sum of our knowledge of nature with its infinite applications to state welfare, to state progress and to the distribution of human happiness.

HENRY FAIRFIELD OSBORN

AMERICAN MUSEUM OF NATURAL HISTORY

ADDRESS OF PRESIDENT TAFT AT THE
FIFTEENTH INTERNATIONAL CON-
GRESS ON HYGIENE AND
DEMOGRAPHY¹

It is my pleasant and honorable duty, on behalf of the people and the government of the United States, to welcome this great congress to Washington.

"Prevention is better than cure." The science of medicine and surgery has made wonderful growths in the last forty years, but in that time it would seem as if the science of sanitation, of hygiene and of preventive medicine had come into being from nothing. And now the two, prevention and cure, through the intense energy, industry, application, keen discrimination and high and enthusiastic aims of the benefactors of human kind, who are now devoting their lives to research, and the investigation of the cause of disease, its transmission and its antidotes, are proceeding, *pari passu*, with such rapidity and success that in the next century we may almost expect to find the equivalent of that fountain of youth and perpetual life which was sought for in this country by some of the early discoverers.

It is easy to make an error with reference to the beginning of a great forward movement by dating it from the time when the

¹ Official report of the address given at Continental Memorial Hall, Washington, D. C., September 23, 1912.

would-be historian has become alive to its progress and convinced of its importance. Now, I do not mean to say that our sanitary science in this country began with the Spanish war; I do not mean to say that it had its origin in the tropics; for I have no doubt that nearly every one who hears me could confute such statements, by reference, for example, to the robbing of dread diphtheria of its terrors by antitoxin and other similar revolutionary discoveries. And yet it is true that out of a war, very short of duration, and of comparatively little importance in the number of men engaged, and the cost, and the lives lost, there came to this country a series of problems, the most important of which included questions of sanitation, the methods of transmission and the cure of tropical diseases, the adoption and enforcement of a system of hygienic law, and the establishment in the tropics of governmental institutions of medical research by army, navy and civilian physicians, which have brought to the attention of the whole country the necessity for widespread reform in our provisions for the maintenance of health and the prevention of disease at home.

Our responsibilities in Cuba, Porto Rico and the Philippines, and now on the Isthmus of Panama, have so enlarged our knowledge of the possibilities of successful sanitation under the most burdensome conditions, and have so impressed both professional men and the laymen at all familiar with conditions, with the necessity for more rigid and comprehensive health laws, and a stricter enforcement of them for the general public good, that if the Spanish war resulted in nothing else, it was worth greatly more than it cost, in this useful development of one of the most important functions that modern government has to discharge, as well as in making clear the need of an additional branch of general education in the matter of the hygiene of the home and of the individual.

It would seem as if the tropics were the proper place for the beginning of a crusade on this subject. In the tropics nature has a more rapid growth, not only in vegetation and in animal life, but the diseases are shown

on a larger scale and permit the study of their development with more certainty of conclusion than in the temperate zone. The effect of preventive regulation upon great bodies of persons is more clearly marked, and the reward for hygienic strictness seems greater and more obvious. When we first went into the tropics, our purpose was to make that region habitable for white people. We have demonstrated that as a possibility. Now we have gone beyond the provision for those who come from the temperate zone, and we are engaged in the work of developing the tropical races into a strength of body and freedom from disease that they have never had before. The prevalence in a whole race of the hook-worm, or of malaria, or of beri-beri, the persistence in the intestines of an entire population of many varieties of disease germs which do not destroy, but weaken and stunt and shorten life, shows the possibility by proper health methods and proper treatment of revitalizing tropical races and securing from them that vigor of physical action which will enable them to develop and enjoy the marvelous richness of the countries in which they live. Of course the problem of enforcing health regulations against the will of an ignorant people, whose natural laziness and resentment at discipline makes the enforcement most difficult, requires a strong government and the raising of a sufficient fund by taxation to maintain an adequate health police. These are the problems in the tropics that every government that has dependencies must meet. There is no difficulty about running a government cheaply if you limit its functions to the mere matter of the preservation of peace and the administration of justice; but if you propose to add to these adequate systems of education, government hygiene, good roads, and other internal improvements, then you must look about for sources of revenue which are not always forthcoming, and an absence of which retards the progress that every good administrator longs for in the interest of the people entrusted to his charge. And then if the government to be established is to be more or less popular, the

people themselves must be educated to understand the importance of the hygienic restrictions, to accept them, and themselves to impose upon themselves the burden of taxation which it is essential for them to carry in order that any progress shall be made at all.

I consider it a proud record of the American army that through its medical corps engaged in hygienic work, so many important discoveries as to the transmission of disease and the method of stopping its spread, have been given or proven to the world, and all of this is dated chiefly from the time of the Spanish war. The elimination of black smallpox by thorough vaccination, the study of bubonic plague, its mode of transmission, suppression of its causes and its methods of treatment, the study of cholera and its method of treatment, together with the preventive inoculation, the study of beri-beri, and the methods of its prevention and cure which have not, even as yet, been altogether satisfactory, the learning of the causes of yellow fever by transmission through the mosquito and its method of treatment so as by isolation of both the patient and the mosquito to prevent its spread in a community, and its ultimate suppression, the minimizing of the bad effects of malaria by the destruction of the mosquito which carries its poison, the ridding a race of the hookworm and its demoralizing physical degeneration, the prevention of typhoid by inoculation, all constitute great steps forward in the treatment of diseases that though most of them are especially formidable in the tropics, are general also in the temperate zone, and in these discoveries which have been made, it is most satisfactory to be able to say that our American physicians have taken and are taking a most important and honorable part. It is very certain that but for these discoveries the construction of the Panama canal, which now since 1904 has been going on with giant strides, and which will be completed within a year, would have been impossible. The effort of the French to build a much smaller canal at the same place would doubtless have been successful but for the problems of hygiene which the science of that

day did not enable them to solve. And now it is proper that the chief health officer in charge of that strip forty miles long by ten miles wide, who has enabled 50,000 people to live there in health and build the canal, should share with the chief engineer the honors when the end shall crown the work. It was most fortunate in working out the problems that these agents of health on the Isthmus had no limitation put upon them with respect to expense, and that everything was at their hand to accomplish the purpose of the nation. Other problems which shall arise in the future may not be so fortunately circumstanced, and economy and the limitations of expense may call attention to the necessity for finding changes in method which shall reduce the cost of the work and bring it within reasonable figures, but it is well that the first effort was not hampered by such considerations. Of course, while the great problem was the problem of the maintenance of the healthfulness of the Isthmus during the construction of the canal, there still remains the important one of keeping the strip healthful while the canal is operated.

The possibilities of improvement through governmental hygiene of tropical countries are so great that it makes one who has any conception of what they are grow enthusiastic in the contemplation of what centuries may bring forth in this regard. Of course, one of the things that will have to be brought about is effective and efficient government in the tropics, and how this is to be reconciled with the growing tendency toward more and more popular government is a question of the education of the people in governmental responsibility. Still the amount which can be done in the enforcement of principles of hygiene with the tropical races and with those who live in the tropics, has already had sufficient demonstration to make one with any imagination at all anxious to look forward to the development of the world around its middle after the temperate zone shall have been occupied to such an extent as to make the enterprising of their inhabitants look elsewhere for migration and settlement. The mere matter of

the improvement of people in the Philippines by the establishment in each village of artesian wells, so as to give them pure water, gives such a marked decrease in the mortality and such a marked increase in the health of the inhabitants as to show a present condition that is capable of wonderful amendment.

I have dwelt at length upon the tropical hygiene because my responsibilities have brought me more into contact with that than with the hygienic problems of the temperate zone, where improvement in conditions is necessarily less marked, because the conditions are not so deplorable when attacked. The range covered by the considerations of this congress is so wide as to be almost bewildering, and the problems which are presented in working out the improvements toward the ideals that are presented are of course most various and most complicated. The question of the interference with personal liberty through the insistence upon the enforcement of health regulations does not present itself in the temperate zone so often as in the tropics, because the prevalence of infectious and contagious diseases in the form of an epidemic is not so great; and yet, as we go on to regulate how people shall live, we may expect to find, as indeed we have already found, considerable resistance and inertia that requires care and caution in the drafting of drastic regulatory provisions. Then the expense of the maintenance of a force sufficient to carry out useful regulations is a most serious question in carrying on a proper government. The number of things that the government has to do has increased so rapidly under the modern view that the necessity for economy in administration was never greater, while the burden of taxation continues and must continue to increase.

I do not doubt that we are beginning a new epoch in humanity's history in this country in reforms looking to the bodily health of those less fortunately circumstanced in their life's condition and work. The study of vital statistics showing the prevalence of diseases and tracing their causes must prompt the organized effort of governmental forces to minimize the causes, and to

furnish remedies for the evil. We have already begun the reform, in our pure food law, in our mining bureau and our children's bureau.

We must initiate investigations into diseases of particular occupations with a view to regulation or prohibition. An example of this we have in the heavy tax upon the making of white sulphur matches. Still greater opportunities for improvement are before us. We need to develop under governmental auspices a bureau or a department, in which the funds of the government shall be expended for research of every kind useful in the practise and enforcement of hygiene and preventive medicine. That something of this sort may grow out of the present United States Public Health Service there is reason to believe, but it will need far greater appropriations and a widening of its scope of duties before it shall have filled the place that the medical profession of this country has a right to expect the general government to create in the progress of hygiene and demography.

I have said little or nothing about the vital statistics, not because I would minimize its importance, but because my information in respect to it is so faulty. I am very certain that we are far behind other countries in the completeness of our vital records, because we are a new country, and we have not stopped to make the needed registers of lives and deaths and diseases and in the hurry of our existence we have failed to appreciate the enormous value that attaches to such statistics in the study of improving methods and the ascertainment of facts essential in the development of hygienic science.

I can not conceive any congress of a more useful character than the one which it is now my honor to welcome. It is useful, first, because a comparison of the ideas and the discoveries and the theories of men engaged in the same hunt for truth, and in the same delving into the mysteries of nature, with a view to wresting her secrets in the matter of the cause and cure of disease, must result in a general benefit to all who take part in such a congress. The science of hygiene and sanita-

tion and demography must be given an impetus the world over by the temporary concentration in close quarters of men from all the world who have been giving their life work to the same problems. It is delightful to contemplate this phase of the congress, because it is one of those shining instances of worldwide organization for the promotion of the peaceful arts, of which I am glad to say the number is growing every year, and in which the common interest of humanity is made conspicuous by contrast with the selfishness and isolation of each nation in the conflict of interests that are typified by our burdensome and ever-increasing preparations for war. Such congresses can not but make for the permanence of peace. They must create a deeper love of man for man. They do stir up in the membership of such a congress, having representation from all the world, a greater human sympathy, and offer to the scientific student who is willing to devote his life to the development of a truth that shall add to the health and comfort and happiness of his fellows, a reward that can not be measured in money but is to be found only in the consciousness of the highest duty well done. But while these things are true with respect to the world effect of such a congress, its local influence upon a country like the United States is much more marked and important in the impetus that it gives to all who are responsible for the health of the community either in their profession or by reason of their official and governmental responsibility. They must have in such a meeting as this, their ideas and their knowledge enlarged, and they must derive an inspiration for better and more enthusiastic work from the commingling of the greatest scientists of the world here, and their exchange of views, and from the very energizing atmosphere of the congregation. I should think that such a congress as this would increase the number of novitiates for the profession of medicine and surgery. Within the last fifty years, no profession has shown such progress, no profession has come near it in the development of its importance for the promotion of the health and comfort of mankind; no profession

has offered to its devotees, in such measure, the priceless reward that comes to any one who has wrested from nature one of her secrets and by disclosing it to his fellowmen has furnished a means for their happier lives.

I congratulate the medical profession of the United States upon this great congress, whose coming here is due largely to their initiative, and the membership of which in large part represents the medical science of the world.

Ladies and gentlemen of the Fifteenth International Congress on Hygiene and Demography, I welcome you to America. I welcome you to Washington. I sincerely hope that your stay here may be as pleasant and agreeable as I am sure it will be useful to this country and to the world.

*TWELFTH ANNUAL INTERCOLLEGIATE
EXCURSION OF NEW ENGLAND*

THE twelfth Intercollegiate Excursion will be held in the vicinity of Meriden, Connecticut, under the direction of Professor W. N. Rice, of Wesleyan University.

Members of the party are invited to visit the geological and mineralogical collections of Wesleyan University, in Middletown, on the afternoon of Friday, October 18. At 6:30 P.M. a collation will be served in Fisk Hall, Wesleyan University. At 7:30 P.M. a meeting will be held in the lecture room of the Scott Physical Laboratory. A lecture illustrated with lantern slides will be given by Professor Joseph Barrell, of Yale University, on "Central Connecticut in the Geologic Past." After the meeting, the party will go by trolley to Meriden, and spend the night at the Winthrop Hotel. The price of lodging at the Winthrop Hotel for members of the party will be one dollar. Breakfast à la carte.

At 9:00 Saturday morning, October 19, the party will take a special car for Westfield. The trolley line follows in general the line of the great fault between Higby Mountain and Lamentation Mountain. The return from Westfield to Meriden will be made partly on foot, and partly by the special car which will be waiting at various points along the route.